The Impact of Partnering on Construction Contracts

by

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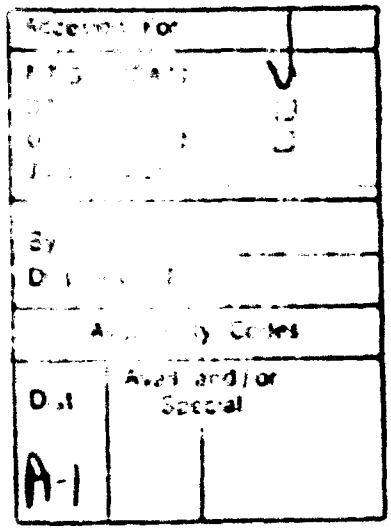

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Abstract

The Impact of Partnering on Construction Contracts

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This thesis presents an analysis of the impact of partnering in construction contracts administered by the Seattle District, U.S. Army Corps of Engineers. Partnering was developed as a method to change the adversarial climate and costly disputes associated with administering construction contracts. Partnering attempts to avoid disputes and to complete a quality project by opening communications while developing a commitment and a shared vision between the contracting parties. This thesis analyzes the impact of partnering by comparing project performance of partnered projects with projects not using partnering. The comparison criteria include time to process modifications, time to process submittals, claims, value engineering change proposals, cost growth, time growth, and general contractor perceptions of partnering.

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CHAPTER I: INTRODUCTION

Each year millions of dollars are spent on construction projects. The owners of the projects attempt to get a high quality project at a low cost. Contractors attempt to build a quality project at a reasonable profit. Every project has inherent problems, such as differing site conditions, ambiguous plans, contradictions between the plans and the specifications, and the personalities of the owner and the contractor, which must be resolved to complete the project. An adversarial relationship between the owner and the contractor can develop when these inherent problems are not resolved and this may result in the completion of a low quality, high cost project.

Public works projects have the same inherent problems mentioned above as well as the fact that the contracts are awarded to the lowest responsible bidders. Low bids with narrow profit margins place the contractor in a tenuous position if a mistake was made in computing the bid. Add to this the stereotypes of the contractor who is out to make a large profit by cheating the government and the government employee who is lazy and gets paid whether he works or not. These circumstances lead to many disputes on construction projects and escalating costs to resolve the disputes. In short, the owners and contractors become

involved in a "no win" situation. This is the situation the Seattle District of the U.S. Corps of Engineers had to work in to administer construction contracts throughout the 1970's and 1980's.

Partnering was developed as an attempt to change the adversarial relationship that existed between owners and contractors and to decrease the costs associated with disputes in administering the construction contracts. Partnering has the goal of changing the "no win" situation to a "win-win" situation for the owners and contractors. Partnering focuses on opening lines of communication between the contracting parties, solving problems as they arise rather than delaying and resorting to costly litigation, and focusing on completing a quality project (Edelman et al, 1991).

Partnering was introduced in public works construction projects in the late 1980's and was praised as a method to reduce costs and improve contract administration. The U.S. Corps of Engineers took a leading role in using partnering to administer construction contracts for public works projects. With initial success on the Oliver Lock and Dam Replacement project and the Bonneville Navigation Lock Projects, the Commander of the U.S. Army Corps of Engineers encouraged all the districts to adopt partnering and use it to the

maximum extent possible (Hatch, 1992). The Seattle District started using partnering to administer construction contracts in 1991.

Overall, partnering is being praised as the way to administer construction contracts. Until now, a thorough study of the impact of partnering on the administration of construction contracts in the Seattle District has not been completed. An assessment of how partnered projects differ from projects without partnering is one reasonable method to assess the success of partnering.

This thesis analyzes the impact of partnering by comparing project performance of partnered projects with projects not using partnering. The comparison criteria include time to process modifications, time to process submittals, claims, value engineering change proposals, cost growth, and time growth. This comparison was augmented by a survey concerning general contractors perceptions of partnering.

CHAPTER II: LITERATURE REVIEW

Partnering is a relatively new form of contract administration in public works contracting, as such, little formal research has been conducted on its effectiveness as a contract administration tool. Parallel to this study, Lieutenant Scott Lowe, U.S. Navy (an MSCE candidate, University of Washington), was conducting similar research with the U.S. Naval Facilities Engineering Command (NAVFAC). With the parallel research with two different agencies of the Federal Government, it was decided to jointly conduct the literature review in order to more effectively research the subject. The material in this chapter is the combined effort of the author and Scott Lowe.

Partnering Definition

According to the Associated General Contractors (AGC), the use of partnering is more than just a change in contract administration, rather it is the use of good common sense. It consists of getting along with people and doing the work at hand in an "honorable, dignified, efficient, and profitable way" (Robbins, 1992) and, "it

dispels the notion that for one side to win, the other must lose" (Agle, 1991). While there are several definitions of partnering, they all have the same focus. They stress changing the traditional adversarial owner-contractor relationship to one of cooperation and achievement of mutual benefits. The Construction Industry Institute (CII) Task Force on Partnering defined partnering as:

> "a commitment between two or more organizations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant's resources. This requires changing traditional relationships to a shared culture without regard to organizational boundaries. The relationship is based upon trust, dedication to common goals, and an understanding of each other's individual expectations and values" (Katz, 1993).

The United States Army Corps of Engineers defines partnering as:

> "the creation of an owner-contractor relationship that promotes achievement of mutually beneficial goals. It involves an agreement in principle to share the risks involved in completing the project, and to establish and promote a nurturing partnership environment. Partnering is not a contractual agreement, nor does it create any legally enforceable rights or duties. Rather, partnering seeks to create a new cooperative attitude in completing government contracts" (Edelman, 1991).

The U.S. Naval Facilities Engineering Command defines partnering as:

> "a common sense communication process. It establishes effective working relationships between the partners and makes their jobs easier. Through commitment, trust, communications and shared objectives, partnering creates an attitude of teamwork and an atmosphere for effective problem solving. This results in a win-win situation for all members of the partnerships" (Buffington, 1992).

The three definitions presented above emphasize that partnering is a communications tool that requires that all members of the partnerships stay in continual contact with each other and that all matters of the contract be discussed as issues come up and that issues be resolved at the earliest time and at the lowest level.

Along with the definition that states what partnering is, there must also be a realization of what it is not. Partnering is not a quick fix to traditional adversarial relationships. Attitude changes take place as a result of cooperation and trust, and may take a considerable time. Partnering will attempt to change the focus of both contracting parties from traditional adversarial attitudes to attitudes of concern for the successful completion of the project.

Partnering also is not a guarantee of profit for the contractor. In firm fixed price contracting there is always the potential for a contractor to submit a bid that

was estimated improperly. All risks that are assigned to the contracting parties in the contract remain with the respective parties throughout the contract duration. The realization of increased profits come from the ability of the contracting parties to resolve problems through cooperation and communication, not in the reallocation of risk.

Partnering will not guarantee that the contract documents are perfect or that the personnel assigned to the contract are experts in the type of construction being accomplished. It will help to point out the weakness that must be overcome through mutual trust and reliability.

Partnering is not a substitute for the terms and conditions of the contract. The "partnering charter" is strictly an informal agreement describing the relationship between the contracting parties. All contractual activities are conducted within the terms of the contract and within the law. The obligations of the written contract are still binding on each of the contracting parties. Personal favors and gratuities are forbidden whether or not partnering is utilized.

Partnering is a change in cultural attitude. If it is not endorsed by all parties in a firm from the Chief Executive Officer down to the lowest position within the company or from the Contracting Officer down to the

Government Field Representative then its effectiveness as a contracting tool will be reduced. Partnering will not survive without the enthusiastic support of top management (Anderson, 1992).

Finally, partnering is not a replacement for all litigation. Litigation is not always counterproductive. It does serve the purpose of establishing legal precedents and law. The precedents set the foundation for settlements of disputed issues in the present case as well as future issues (Engineering News Record, February 1991). The problem with litigation is that too often it results in a large cost to settle a relatively small issue of disputed costs.

Partnering places all players in the construction process on one team and requires all members to actively fulfill their roles on the team. Each member of the team has unique skills, abilities, and shortcomings. To be an effective team, every member must know the capabilities of the other players. The end result is a team that accomplishes its project with minimal delay or disputes. This approach expects owners and contractors to assist each other, provide back up support, and relay information. In problem areas, solutions are sought and blame is not pinpointed. For the team to work, top management of all parties involved must be committed. Top

management must give the players the responsibility and the authority to make decisions at the lowest levels of the project. On-site personnel should be the ones solving disputes and making decisions. Top management must insure that this happens and make sure that everyone on their part of the team abides by the rules. Management must replace the players who can not fit into the team.

Keys To Partnering

There are several keys that make a successful partnering relationship. Different organizations have defined different keys, usually just expanding on a common list. Three keys that most groups incorporate in their lists are trust, commitment, and a shared vision. In trust, all parties are getting back to the older or traditional values when agreements were commonly made on a person's word or a handshake. Contracts and lawyers are not needed to insure everybody does what they say. The other party believes what another person tells them. They do not doubt or question their word. This trust must be mutual. Another key is commitment. This includes the commitment from top management, which was already discussed, and from the players. Everybody on the team must be committed to the partnership. If one person just

goes through the motions and talks about action, the partnering effort will fail. Every member must be committed and show it. The third key is a shared vision where all players know and understand the final pro as well as the objectives of the other players. Using a shared vision, everybody can analyze their actions against the final product and the partnership's objectives. Personnel start protecting the project and each other's objectives. All of the players objectives are developed and resolved during the partnering process. The shared vision insures everybody is on the same "sheet of music."

There are arguments that oppose partnering. It has been suggested by some that partnering is just a new word for the way business in the construction industry was conducted several years ago. AGC President Marvin M. Black has been quoted as stating, "It's getting back to the old fashioned way of doing business with a handshake and taking responsibility for what you do. Partnering formalizes that agreement." Time has eroded the meaning of a handshake and the word of honor between two reasonable people (Schriener, 1991). Time has also implemented the need to use the courts to settle all differences no matter how small or insignificant the problem might be. Arguments can be made that partnering will only work in situations where the contracting parties

want it to work, and if one of the contracting parties has unreasonable expectations then no amount of partnering will avoid the potential claims and litigation. Where partnering does not work, provisions for the creation of a disputes review board might be included to compliment the process (Shanely, 1992).

Implementation

Implementing partnering is not difficult nor time consuming, but it does require a paradigm shift in executing a contract. The four steps in executing partnering are:

-Mutual agreement to use partnering

-Selecting a partnering champion

-Creating a charter

-Executing the project and evaluation

The first step is for all parties to agree to partner the project. This must be a free decision. Any coercion at this point "kills" the partnering process. The partnering relationship should be made as soon as possible in developing the project. In the private sector, this can begin when the project is still in the design stage. For public works, partnering begins when the project is advertised for bid and is formally established once the

contract is awarded. In this step, top managers representing all parties come to an understanding about what they want out of the project and become committed to the partnership. Partnering has also been implemented successfully in the middle of an ongoing construction project (Brown, 1993).

The second step is selecting a champion for the partnering process from all parties. These champions are representatives of management and will be on-site for the duration of the project. They are responsible for the daily implementation of the partnering effort. They are also concerned with keeping the new partnering culture intact and preventing adversarial relationships from developing.

The third step consists of creating a charter. This is accomplished during a workshop. This workshop is attended by the major players on the project site. All players discuss their expectations for the project and identify concerns about dealing with the respective organizations. Everybody participates in exercises involving communication, problem solving, and group interaction. After this introductory portion is completed, the workshop focuses on the construction project. All suspected problems concerning execution of the project are identified and discussed at this point. A

clear understanding of the fears and concerns of the contracting parties aides in building the mutual trust and developing a shared vision. The group then develops a partnering charter which includes the mission statement, project objectives, implementation plan, and conflict resolution strategy. In the mission statement, the parties declare a mutual commitment to each other and to a quality project. The project objectives outline specific tasks that must be met or completed for all the parties to have a successful project. The implementation plan then quantifies how and when the objectives are to be met. This plan provides a method to evaluate the partnering process throughout the project. Finally, the conflict resolution strategy states how problems are identified and how to solve them.

The partnering workshop can last from one to five days. It is ideally held on a neutral site and usually conducted by a professional facilitator. The facilitator provides expertise in teamwork development and serves to keep the process moving towards a completed charter. This workshop can be altered to meet the requirements of the players and the project.

The fourth step is executing the project under the partnering concept. The important part here is to continually focus on the goals of the partnership and

review how the partnership is progressing. A continuous flow of information is critical. All parties must communicate problems as they develop so the team can solve them. On long duration projects, a periodic review of the partnering charter or participation in a second or follow up workshop may be beneficial.

Partnering In Public Works

In private construction, partnering seeks to be a long term relationship. The owner and the contractor learn from their experiences on previous projects and make improvement on succeeding projects. The contractor interacts with the owner throughout the project from developing the concept to completing the job. In public works, the low bidder gets the project. Here, a partnering agreement can only be developed after awarding the contract and the partnering process terminates with the completion of the job. These circumstances make it critical to promptly begin the partnering process once the job is awarded. Participation in the partnership must be voluntary. Making partnering a contract specification violates the basic concept of partnering. In many public projects, an invitation to use partnering is included in the "Notice to Bidders." This may be followed up with a

small presentation about partnering to all contractor present at the bid opening or the pre-bid conference. The costs of partnering are shared by all parties involved. A typical partnering invitation in the "Notice to Bidder" is as follows:

> "In order to accomplish this contract most effectively, a cohesive partnership between the Government and the contractor (including subcontractor) will be developed. This partnership will strive to draw on the strengths of each organization in an effort to achieve a quality product done right the first time, within the budget and on schedule. This partnership will be achieved through a three (3) day workshop at a mutually agreed upon location, not adjacent to the job site. The workshop will be held during normal working hours within 90 days of the contract award.
>
> "The contractors' key personnel will attend the 'partnering' workshop. Contractor and subcontractor key personnel are the Project Manager, Assistant Project Manager, Superintendent, CQC Representative, Submittal Assistant and specialized supplemental inspection personnel.
>
> "The contractor and the Government shall equally share in the incurred costs of the workshop. These costs include the facilitator's fees, travel and per diem expenses, and the cost for a meeting room for approximately 20 people. Travel and per diem costs for the prime contractor and key subcontractor personnel shall be the contractor's expense. The Government's expenses shall include the Government's representatives and related travel and per diem. The total cost for this partnering workshop typically range (sic) from $5,000 to $7,000" (WESTDIVNAVFAC Memo, 1992).

The successes of partnering have resulted in many public agencies implementing partnering arrangements on many of their construction projects. NAVFAC, for example,

has recently introduced a policy decision stating that partnering will be invited on all projects of $500,000 or more in value. This is a change from the previous policy of considering implementing partnering on projects valued in excess of two million dollars. NAVFAC's participation in partnering has steadily increased from two partnered projects in 1989 to well over sixty projects in 1993 (NAVFAC, 1993). Another public agency that converted to endorsing partnering agreements is the California Department of Transportation (CALTRANS) which recently stated that all future contracts will have an invitation to partner (Civil Engineer, August 1993). In addition to CALTRANS mentioned above, other States have implemented partnering within their respective transportation departments. Washington State Department of Transportation (WSDOT) has claimed significant improvements through partnering in the administration of construction contracts due to improved feelings of trust and respect, improved communications and increased efficiency (Anderson, 1992).

The Arizona Department of Transportation (ADOT) instituted the partnering concept into their construction projects in 1991 and have had resounding successes. When U.S. Army Colonel Charles Cowan retired from the Corps of Engineers, he went to work for ADOT and brought with him

the partnering concept that is now a major part of ADOT's highway construction program. ADOT's first partnered project was a $6.2 million project on Interstate 17 in north Phoenix. The project was expected to have a duration of 17 months, however, the project was completed in only seven months. Partnering was credited with the schedule savings, as well as $60,000 in construction savings and $140,000 in value engineering savings. ADOT has now instituted partnering as the standard method of doing business and views the partnership as a team effort to accomplish the project (Flynn, 1992).

The Connecticut Department of Transportation (ConnDOT) has also recently converted to partnering in its administration of construction projects. Impressed with the results of the Corps of Engineers efforts and Arizona Department of Transportation, ConnDOT is attempting to use partnering in its reconstruction of bridges along State Route 8 in Connecticut (Gruhn, 1993).

The U.S. Army Corps of Engineers, a pioneer in the partnering concept for public works construction, has recently expanded its partnering efforts to the environmental cleanup projects. The Corps of Engineers has signed agreements to implement partnering on all of its clean-up projects including Superfund projects and base closures. One such agreement was signed with The

Hazardous Waste Coalition, an association of environmental contractors. The Coalition hopes to include partnering in its contracts with the Navy and the Air Force (Engineering News Record, April 1993). It is obvious that partnering is quickly gaining widespread acceptance.

Results of Partnering

There are numerous benefits to partnering a project. Most of the results of partnering are difficult to quantify but they are generally perceived by the partners as being beneficial. One quantified benefit is the decrease in litigation and the number of unresolved conflicts at project completion. The open communications and teamwork approach solves problems as they develop. The problems are solved by on-site personnel who can make informed decisions. This has eliminated escalating the problem to higher management and evolving into a "us against them" approach. A CII survey reported partnering reduced owner project costs by 8%, shortened schedules by 7%, and improved contractor profitability by 10% (Hancher, et al, 1991). Another benefit of partnering is a higher quality project since all personnel on the job are focused on the project and not on blaming each other for difficulties that arise. The personnel working on

partnering jobs are happier and their job satisfaction has improved. As a result, safety and overall quality of construction improved.

The costs involved in partnering are minimal. The only direct cost is the cost of the workshop. A workshop facility must be rented and a professional facilitator must be paid. This direct cost of the facilitated workshop is usually around $5,000 to $7,000 and is split between the partners. Other costs include the time of all participants at the workshop and these costs are the responsibility of the individual contracting parties for their own personnel. Most workshop participants are managers who lose two or three consecutive days from other productive company work. Another cost is the administrative time the champion spends maintaining and evaluating the partnership. This new duty also takes away time from other project-related duties but contributes to project completion. Most partnering costs pertain to management productivity and are included in project overhead (Mobile, 1990).

This new method of contract administration has been widely embraced as the style for the owner-contractor relationships of the future. The AGC now gives annual awards for partnering excellence. The award is the Marvin M. Black Excellence in Partnering Award and is named for

AGC's 1991 president. The first awards were presented in 1993 to eight general contractors whose projects ranged in size from one million to 54 million dollars. The eight projects are summarized in Table I.

Table I. 1993 AGC Marvin M. Black Excellence in Partnering Award Winners.

Project	General Contractor	Owner	Project Size
Sheplars Western Wear Las Vegas, NV	Jaynes Corporation Albuquerque, NM	Kabuto International	$1 million
French Creek Pumping Station Snohomish, WA	Thompson-McDougall, AJV Portland, OR	Soil Conservation Service	$6.2 million
Secure Assemble and Test Facility San Diego, CA	Kvaas Construction Co Inc San Diego, CA	U.S. Navy	$7.5 million
School Of Americas Fort Benning, GA	Connor Bros. Construction Co. Inc. Auburn, AL	U.S. Army	$24.8 million
F117A Stealth Fighter Maintenance Docks/Hangers Holloman AFB, NM	Hensel Phelps Construction Co. Austin, TX	U.S. Air Force	$54.1 million
Kitt Peak Observatory Road Pima County, AZ	Granite Construction Company Watsonville, CA	Arizona Department of Transportation	$1.1 million
John Deere Family Health Care Clinic Moline, IL	Estes Company Davenport, IA	John Deere Inc.	$3.1 million
West Mixmaster Polk County, IA	Cedar Valley Corporation Waterloo, IA	Iowa Department of Transportation	$3.7 million

Source: (Constructor, April 1993).

All of the projects were described by the contracting parties as resounding successes. The Sheplars Western Wear project was completed in only 35 days whereas 120 days was the norm for this size and type project. The owner, architect, and contractor worked in close harmony to meet very tight schedule constraints and enhanced the use of value engineering proposals to avoid potential problems. The contractor stated that there were at least 35 separate issues that could have become claims but due to the close partnering relationship, all 35 issues were easily resolved.

In another tightly scheduled project, once again, claims were averted through the use of cooperative communications in the French Creek Pumping Station project. The dairy farms surrounding Snohomish, Washington have suffered many losses over the years to flooding problems, but thanks to a partnering approach in the construction contract the floods were averted and the project was completed four months early and prior to the rainy season of 1992. The use of value engineering concepts enabled the contractor to propose a unique cofferdam design that was evaluated and accepted in record time and ultimately contributed to the early and successful completion of the project.

The Secure Assembly and Test Facility was a classified construction project in San Diego for the U.S. Navy. All personnel, and visitors, were under a constant reminder of the partnership that existed between the contractor and the Navy. A banner was a permanent fixture at the entrance to the job site that read, "A Successful U.S. Navy/Contractor PARTNERING Project, Be proud of your work, Be proud of your Country". The focus on open lines of communication was apparent at all times. This successful project resulted in no lost time accidents, completion on time and under budget. Again, value engineering proposals were a common denominator to the success of this critical project.

The U.S. Army had a potential for many claims and safety mishaps on the School of Americas project at Fort Benning, Georgia. The project involved 26 buildings requiring different expertise. The buildings required renovations to modern construction standards or restoration to 1930 standards of appearance. Many of the buildings were multistory structures. Other potential problem areas were evident as well, such as a mile of deep trenching for sewer lines. All of these problem areas were successfully reduced to safe, on time work with only two minor reportable accidents. Value engineering

proposals by the contractor were instrumental in the ultimate success of the project.

The Kitt Peak Observatory Road project was a renovation on a mountainous road on the Tohono O'Odham Indian Nation. Previous attempts to repair the 5,300-foot elevation section of roadway had failed and since there was no other access to the observatory, it was decided that the project had to be completed without the usual adversarial conflicts of traditional contracting. Partnering is credited for the on budget and early completion of the project. Credit for the savings of nearly $50,000 to the project is also given to partnering in the value engineering provisions of the contract.

In an example of successful private contract partnering, the John Deere Family Clinic project was completed under budget, on schedule, and resulted in only one reportable injury. The owner, architect, and contractor worked together early in the project to select all suppliers and subcontractors. The prime contractor worked closely with the owner at every stage of construction to insure any punchlist type discrepancies were corrected during construction and not at the end of the project. This zero punchlist strategy enabled the contractor to successfully complete the project without any rework.

The West Mixmaster project was a partnering effort with the typical use of partnering workshops and the drawing up of a charter spelling out the usual goals of effective communications and goals for completion; however, the partnering charter also included time scales for the resolution of conflicts and disputes. This helped each contracting party to focus on where each conflict was going and it kept the momentum of the construction effort going.

It is apparent that the concept of partnering is enthusiastically endorsed by the AGC. In a survey conducted in September 1992, the AGC found that all of their member chapters employed training for the contractors within the local chapter memberships to adopt partnering strategies. Chapters are now starting to develop Quality in Construction Committees and extensive use of partnering literature and partnering consultants are used to educate contractor and owners of this change in contract administration (Constructor, November 1992).

Another successful partnered project was evidenced by the successful completion of the $20 million propulsion training facility at the Naval Weapons Station, Charleston South Carolina. In this key project, the U.S. Navy was concerned with the successful completion due to ever tightening Military Construction money and the contractor

was interested in completing a "showcase" project to add an impressive facility to its resume of successful projects. Both contracting parties were able to communicate their respective goals in the partnering atmosphere, and with a shared commitment to the completion of the project, they were able to focus on the path to a successful completion (Cooper, 1992).

Current Issues

One current issue on partnered projects is the blurred responsibility on the project. As all partners begin sharing the risks and participate in solving problems, the old clear lines of responsibility between owner, engineer, and contractor are not so clear. Any liability or costs may be incurred by all parties as a group effort in construction may lead to group mistakes. On private projects, this liability and its associated costs can be discussed and negotiated. An owner may be willing to accept part of the cost in a partnership where as before, the owner would insist the contractor was fully responsible. In public works, this type of negotiation is illegal. The partners must look to the contract to determine responsibility and liability. Assigning the

responsibility or pin-pointing the blame can impede the partnering effort.

Recently the issue of project quality has been debated. Detractors of the partnering process claim that quality control inspectors accept work that does not meet the contract specifications in order to avoid a confrontation, thus creating a conflict for the partnership. The Arizona Department of Transportation (ADOT) has heard these complaints about their projects and is developing a methodology that allows the state to make an objective comparison of project quality. The agency believes that partnering has not diminished the quality of their construction projects. ADOT has used partnering on 96 projects valued in excess of $300 million without a claim (Engineering News Record, July 1994).

On public works projects, an issue of concern relates to how to avoid the old adversarial relationships. In competitive bids, the contractor and subcontractors have very little margin for profit. This severely impacts their ability to make monetary concessions and still have a successful job. If a project develops too many problems at once, the bottom line may override the partnering agreement. If the partners view the partnering effort as compromising their chances for a profit, the partners will probably start working against each other.

Another potential problem arises when partnering is not fully accepted. As stressed earlier, partnering is a change in attitude about contracting and it is intended to be ingrained in company and agency policy. There are skeptics, and there are failures of implementation of the process. Some of the leery have stated that partnering works well at the start of a project but will fall into the normal routine once the partnering "honeymoon" is over (Cosinuke, 1993). Other concerns are that owners might feel that partnering is the ultimate answer to poor plans and specifications, variations in estimated quantities, and other risks over which the contractor has no control. Minimizing the impact of those problems is the intent of partnering.

Guidelines for successful partnering have been developed by several organizations so that the successes enjoyed by many contractor/owner partnerships can be universally applied. Joint guidelines issued by the AGC, American Subcontractors Association (ASA), and the Associated Specialty Contractors (ASC) offer advice on the development of the partnering strategy (Constructor, November 1992).

Partnering is gaining so much momentum that the "old" way of doing business is becoming the exception rather than the norm. The American Arbitration Association (AAA)

is now endorsing the partnering way of doing business. In Northern California, the AAA has created a "partnering facilitation team" to begin its dispute prevention program in harmony with its traditional dispute resolution work. The facilitation team comes into projects and helps to begin the partnering process. The added benefit is the AAA's experience in dispute resolution in the case of a possible dispute that the new lines of communication can not solve (Civil Engineer, April 1994).

The 1994 Annual CII Conference discussed partnering for the sixth consecutive year. Of particular interest at the 1994 conference was the increase in the use of project partnering. Tables II, III, and IV summarize the rise and impact of partnering in several public agencies. Claims of improved project safety were attributed to partnering, however, no data relating recordable accident rates or lost workday rates were provided concerning public agencies.

Table II. Summary of Increased Partnering Use.

Agency	Results
U.S. Army Corps of Engineers	1988 3 Partnered Projects 1993 35 Partnered Projects
Departments of Transportation	1990 2 DOTs Use Partnering 1993 40 DOTs Use Partnering
CII Members	1993 Survey 84% of respondents Used Partnering/Team Building 31% Extensively Used Partnering 17% Some Use of Partnering

Source: (Gray, 1994).

Table III. Summary of Claims Reduction in Partnered Projects.

Agency	Results
Texas DOT	Prior to Partnering 28 Claims/year 70 Partnered Projects 1 Claim
Arizona DOT	1991 60 Claims: Begin Partnering 1992 20 Claims 1993 1 Claim(non-partnered job)

Source: (Gray, 1994).

Table IV. Summary of Project Improvements from Partnering.

Agency	Results
U.S. Army Corps of Engineers	Study of 50 Partnered Projects Cost Changes Down 14% Schedule Changes Down 10% Claim Costs Down 7.5% Value Engineering Up .4%
Arizona DOT	Savings from Partnering $7,313,530 Cost of Partnering $1,500,000 Net DOT Savings $5,813,530

Source: (Gray, 1994).

Other organizations have also added their expertise in to partnering facilitation. The Shilstone Companies of Dallas, Texas have recently developed a "concrete construction facilitator program." Portland Cement Concrete (PCC) experts are hired to help newly formed partnerships develop the most efficient means of accomplishing the PCC portions of the contract. Under the program the contracting parties agree to the selection of a PCC facilitator and joins into a limited partnership to review the contract, evaluate local resources, and develop technical alternatives that will result in the most efficient PCC placement. This addition to the partnering arrangement is designed to avoid constructibility problems in certain complex projects. Shilstone's objective is to work within the bid price, and try to anticipate where all the potential for disputes/claims might arise in the concrete portion of the specifications and plans (Civil Engineer, April 1994).

CHAPTER III: RESEARCH METHODOLOGY

A study was devised to examine the impact of partnering in the administration of construction contracts. The primary research effort would consist of analyzing projects from the Seattle District of the U.S. Army Corps of Engineers. Standard reports in use by the district would be carefully examined to research the partnering process. This was augmented by a survey of contractors on a list of plan holders for the district. The survey requested contractor opinions on the use of partnering in construction projects.

Construction in the Seattle District

The Seattle District of the U.S. Army Corps of Engineers is responsible for the administration of construction projects for the U.S. Army, U.S. Air Force, Department of Defense, and other Federal agencies as required by Congress or through mutual agreement. The Seattle district administers military construction contracts in the states of Washington, Idaho, and Montana. This construction effort is mainly on Army and Air Force bases in these states. The Seattle District also

administers civil works contracts in the state of Washington and along parts of the Columbia River basin.

The district has two area offices, one at Fort Lewis and one at Spokane, which administer the construction contracts. The area offices provide the government's contracting representative and quality control personnel, and process all contract related actions including Requests For Information (RFI), contract modifications, review and approval of submittals, and requests for payment. The district headquarters prepares and awards all contracts, provides cost estimating, in-house design, technical expertise in construction matters, and legal counsel.

Areas to Analyze

The study to determine the impact of partnering on the administration of construction contracts was focused on comparing measurable data that reflects contract performance between projects using and not using partnering. Comparing construction projects is always difficult since each project is unique. A valid comparison of projects can be more readily achieved if the data is a measure of the administration of the project. The data selected for comparison included:

-Time to process modifications

-Time to process submittals

-Value Engineering Change Proposals (VECP)

-Number and amount of claims

-Cost growth of project

-Time growth of project

-Contractor perceptions about partnering

Time to process RFI's could also be analyzed; however, the district does not permanently record or maintain this information on its projects.

Since open communications between owners and contractors is essential to effective partnering, some data selected for comparison dealt with timely communication of information. The time to process submittals, measured from the time the contractor submits the item until the time the government returns the item, should be quicker or the same for projects using partnering over projects without partnering. In partnering, timely submissions and responses to requests should be the norm.

Another measure of the open communications between the contracting parties is through the time required to process modifications. The time is measured from the time the modification proposal is requested until the time the modification is issued. Modifications usually deal with

granting additional time and/or money to a contractor for work that was required due to correction of design errors, user requested changes, differing site conditions, or as a savings to the owner due to the deletion of some work or the acceptance of a product substitution. Timely processing of modifications has an immediate financial impact on the contracting parties. The use of partnering should decrease the amount of time required to process the modification change orders.

Partnering should increase the number of value engineering change proposals (VECP) on a project. The contractor accepts all the risks when submitting a VECP. The contractor dedicates time, money, and other resources to propose a different method of construction or a deviation from the plans and specifications without any guarantee that the proposal will even be given serious consideration. The owner must evaluate the VECP and determine if the proposal meets the original intent of the design and if it actually saves money. This process is time consuming and inefficient if proposals are not acceptable. Communication of ideas and joint ownership of the project in a partnering relationship should enhance the submission of VECPs. The literature review revealed partnered projects claim to significantly increase VECPs. The number and value of VECPs is easily measured for

projects and a comparison of partnered projects and projects without partnering should show a difference.

One of the main reasons for the popularity of partnering is the view that the number of claims at project completion is significantly decreased. All problems that arise on a project should normally be resolved by the representatives of the contracting parties assigned to the project. The elements of trust, commitment, and a shared vision should override any feelings of right and wrong and allow the contracting parties to resolve all disputes. The number and dollar value of claims associated with partnered projects should be substantially less than the number and dollar value of claims associated the projects not using partnering.

Another item of interest is the assertion that partnering decreases the cost of the project. The district measures this item in terms of project cost growth. This is the change in the cost of the completed project from the original bid price at which the contract was awarded. There is rarely a decrease in the overall cost of the project. Whenever a cost savings occurs, the user of the project normally adds work or improves the quality of products in the current construction with the funds available as a result of the savings. Additional construction costs that were not included in the original

contract routinely occur because each project is unique and all problems or shortcomings cannot be forecasted. Partnering should aid in limiting the amount of cost growth due to open communication, identifying problems early, and using teamwork to develop optimal solutions.

Time growth of a project is another item of concern that advocates of partnering claim to limit. Open communications and timely decisions by the partnering champions should eliminate delays to the construction project and thus decrease time growth. Changes to the construction schedule are inevitable on many projects. Identifying the changes and the impacts at the earliest possible time allows the contractor to make adjustments to the construction schedule that facilitate the changed work and keep the project on schedule. The weather is one factor in the time growth of a project that cannot be controlled. The data collected for time growth will account for the time extensions due to weather.

Information concerning time to process modification change orders, VECPs, cost growth, and time growth is contained in the district's (A.M.P.R.S.) Construction Managers Report. Information concerning the time to process submittals is contained in the submittal register prepared for each project and is held in the area offices. Information concerning claims is contained in the

district's Office of Counsel Contract Claims and Appeals Report.

Another important aspect of judging the impact of partnering on construction projects is the perception of contractors. An effective partnering agreement must be entered into voluntarily. If contractors are generally apprehensive or skeptical about partnering, the potential opportunities to use partnering is decreased. A potential contractor with a positive view or experiences with partnering should increase the opportunities to use partnering in the future. This should have a favorable impact on partnering within the district. It was decided that a survey of general contractors concerning their attitudes and experiences with partnering would provide meaningful information. The survey is contained in Appendix B (Survey for Contractor). The survey consisted of eight questions and dealt with the following:

-potential impact of partnering on a project

-the influence of the possible use of partnering on bid decisions

-each responding contractor's past experiences in using partnering on government agency construction contracts

-the effect of partnering on a project

A list of 59 potential prime contractors was compiled from a planholders list for three projects to be bid in late 1994. As of September 7, 1994, 34 contractors (57%) responded to the survey.

Selection of Projects

Every construction project is unique and this poses difficulties in attempting to compare projects, as was previously mentioned. All construction projects selected are administered by the Seattle district. All projects within the district use the same methods for administering contracts. This should insure that data from each project was collected in the same manner as data from any other project.

The Seattle District had 12 partnering construction projects scheduled or completed as of May 5, 1994 since partnering was introduced. Construction on one project has not begun and two projects are only three months underway. The other nine projects range in value from $1.4 million to $33.5 million with six of the projects completed. All nine partnered projects are new construction projects begun after October 1991.

One step taken to compare projects that were similar was to select non partnered projects valued in excess of

$325,000, at least 80% complete, and listed on the (A.M.P.R.S.) Construction Managers Report dated May 9, 1994. All projects were coded to identify the type of construction. Projects coded as new construction or construction that is a substantial addition to existing construction were selected. Qualifying projects were coded as follows:

-07,08,09 Base Realignment and Closure Construction

-10 Military Construction Army

-12,18 New Construction U.S. Army Reserve

-20 Military Construction Air Force

-32 Military Construction Navy

-45 Family Housing

-60 Non Appropriated Fund Construction

-BE Civil Works

This search yielded 17 construction projects ranging in value from $327,000 to $10.6 million. Each of these was started after 1990.

Once the construction projects involving partnering and similar projects not using partnering were identified, data were collected in each of the areas to be analyzed from standard reports within the Seattle District. At the same time, the survey of the contractors was executed in order to determine the perceptions and attitudes of contractors concerning partnering.

CHAPTER IV: ANALYSIS OF DATA

The data collected on selected projects from the Seattle District, U.S. Army Corps of Engineers were analyzed with a focus on the comparison of like data between partnered projects and projects without partnering. The data collected from various general contractors were analyzed by comparing responses to the survey questions.

Data Summary

Table V is a summary of partnered projects and Table VI is a summary of projects without partnering. There are a total of 17 projects without partnering and a total of nine partnered projects. This results in a ratio of 1.9 projects without partnering to each partnered project. The time to process modifications is measured as the number of days from the time the modification proposal is requested until the time the modification is issued. The time to process submittals is measured as the number of days from the time the contractor submits the item until the time the government returns the item. The cost growth of a project is measured as the percent change in the cost of the completed project from the original bid price at

which the contract was awarded. The time growth of a project is measured the percent change in the duration of the project at substantial completion from the original duration to substantial completion in the contract.

Table V. Summary of Partnered Projects.

Project	Average Modification Time (days)	Average Submittal Time (days)	Cost Growth	Time Growth
AA	72	10.2	15.2%	3.3%
BB*#	74	8.1	6.3%	0.7%
CC	109	10.3	1.6%	0%
DD*#	50	8.0	7.1%	11.1%
EE	42	8.4	16.1%	10.8%
FF	37	5.5	2.1%	0.2%
GG#	84	14.3	7.1%	0%
HH	143	4.64	12.8%	6.0%
II#	59	10.2	9.9%	0%

* Represents project with a claim.
\# Represents project with a value engineering change proposal.

Table VI. Summary of Projects Without Partnering.

Project	Average Modification Time (days)	Average Submittal Time (days)	Cost Growth	Time Growth
A*	83	13.3	12.2%	13.1%
B	55	5.9	7.9%	0%
C	67	9.2	9.1%	0%
D	45	12.4	15.2%	22.2%
E	73	5.9	12.4%	11.1%
F	58	5.3	2.2%	67.7%
G	29	8.6	17.5%	26.1%
H	55	12.0	6.3%	0%
I	49	9.9	6.3%	0%
J	79	13.4	11.2%	1.4%
K	56	12.0	5.3%	11.1%
L	58	7.5	6.2%	0%
M	27	5.4	4.8%	0%
N	65	6.9	3.9%	0%
O	90	12.0	3.1%	33.5%
P	38	8.6	4.2%	17.6%
Q	53	7.5	3.1%	0%

* Represents project with a claim.
# Represents project with a value engineering change proposal.

Modifications

Table VII summarizes the average time to process modifications. The minimum and maximum averages represent the average time to process modifications of individual

projects. The times to process individual modifications from the sampled projects varied from two days to over 320 days. The average processing time for projects without partnering is lower than on partnered projects. Partnering, according to the literature, should have the effect of decreasing the time required to process a modification. If the contracting parties have open communications, all proposed modifications and changes should have been discussed and the situation clarified prior to submitting the paperwork. Having a clear picture of the problem would allow quicker processing of the change. When the problem is not clearly defined or understood, the contracting parties must ask questions and send paperwork back and forth to clarify the problem so the modification or change can be processed. In the projects sampled, the processing of changes on partnered projects is not as efficient as expected.

Table VII. Average Time to Process Modifications.

Type of Project	Average (days)	Median (days)	Minimum (days)	Maximum (days)	N
Partnering	74	72	37	143	9
W/O Partnering	58	58	27	90	17
All Contracts	64	58	27	143	26

Table VIII summarizes the processing of modifications by the type of change that required the modification. Comparing the average times in Table VIII, the partnered projects maintain the same trend demonstrated in Table VII, with the exception of type C7 changes. Type UA changes are modifications that the user of the project, not the Corps of Engineers, requests after the project has been awarded. These type changes bring a third party, the ultimate project user, into the modification process. This should typically increase the amount of time to process a modification. In partnered projects, this time should be decreased over projects without partnering because all three parties, the user, the government representative, and the contractor, have worked together in partnering workshops and are aware of each other's situations.

Table VIII. Average Time to Process Modifications by Type of Change.

Type of Project	UA (days)	CV (days)	C2 (days)	C7 (days)
Partnering	80	71	67	45
W/O Partnering	69	52	59	53
All Contracts	72	59	62	50

UA = User Requested CV = Deficiency in Plans
C2 = Engineering Change C7 = Differing Site Conditions

Type CV changes are modifications that are necessary to complete the construction contract within the guidelines and/or intent of the plans and specifications. These type changes cover work that was not required by the contract but is integral to completing a quality project. It could also involve work that is not necessary and this could result in a savings. On many occasions, the contractor discovers these type changes and initiates the modification process. Again, partnered projects should have quicker processing times over projects without partnering due to the better communications and early identification and joint discussion of problems between the contracting parties.

Type C2 changes are modifications that are required to remedy deficiencies in the contract plans and specifications. These changes have the same characteristics as type CV changes. In both cases, timely solutions or approval of solutions by the Corps of Engineers insures that the contractor is not delayed in completing the project.

Type C7 changes are modifications due to differing site conditions. These changes can be the most difficult to process because it involves judgement. Differing site conditions are the result of site conditions which are not clearly defined in the contract documents. The

contracting parties must reach an agreement or a claim is likely. In partnered projects, the contracting parties should be aware of potential problems from their workshop discussions and already have a dialogue to facilitate the modification process. Partnered projects should have a quicker processing time over projects without partnering due to open communication and a better working relationship.

For type UA, CV, and C2 changes, the processing times on partnered projects did not decrease as expected. The results demonstrated in Table VII show that partnered projects require longer times to process modifications. When examined by the type of change, only the type C7 changes act as expected with partnered projects having a quicker processing time over projects without partnering.

Submittals

The inefficient use of time to process a submittal can delay a project. The contractor needs the approval of the Corps of Engineers to continue or to execute a certain aspect of the project. Partnering should enhance the submittal process to insure that the contractor makes submittals in a timely fashion so the government representative has time to make the appropriate decision

to accept or reject the submittal. Similarly, the government representative should advise the contractor of the status of the submittal, acceptance or rejection, as soon a possible so as not to delay the contractor. The government representative could remind the contractor about submittals that are late or close to submittal time in an effort to insure timely processing of submittals. The ccntractor should only have to request expedited processing of a submittal when it is absolutely necessary.

Table IX. Average Time to Process Submittals.

Type of Project	Average (days)	Median (days)	Minimum (days)	Maximum (days)	N
Partnering	9.7	10.2	5.5	14.3	9
W/O Partnering	9.1	9.9	5.3	13.4	17
All Contracts	9.4	10.2	5.3	14.3	26

Table IX summarizes the average time to process submittals. The minimum and maximum averages represent the average time to process submittals of individual projects. The times to process individual submittals from the sampled projects vary from same day notification to over 60 days. The comparison of the average processing times of partnered projects with projects without partnering in Table IX shows no significant difference in

the time to process submittals. The average time and maximum time for partnered projects is higher than projects without partnering and the average time for all contracts. Partnering does not appear to effect the average time to process a submittal.

Value Engineering Change Proposals

Table X shows data concerning the value engineering change proposals (VECP) for partnered projects and projects without partnering. For the projects sampled, the results are significant. Projects without partnering are without VECPs while 44% of the partnered projects had VECPs. One project with construction valued in excess of $33 million accounted for four of the eight VECPs. A larger, more complex project may provide greater opportunity for innovations and improvements resulting in VECPs. The spirit of cooperation and improved communications on partnered projects also contributes to increasing VECPs.

Table X. Summary of Value Engineering Change Proposals.

Type of Project	% of Projects with VECPs	Value of Each VECP	Total Value of all VECPs
Partnering	44%	$12,073 $27,270 $21,090 $2,052 $58,050 $83,790 $49,108 $19,237	$272,570
W/O Partnering	0%	None	$0

Claims

A claim on a construction project is initiated when the contracting parties cannot reach an agreement on payment for some project related work. Most claims arise over changes on the project or from differences in the interpretations of the contract documents. These disputes are usually resolved in the Area Office if the government representative and the contractor cannot work out an equitable solution. If the Area Engineer cannot resolve the situation, a claim is the result. Table XI shows the claims involved in the surveyed projects.

Table XI. Claims.

Type of Project	Claims per $10 Million of Construction	Number and Value of Claims per Project	Total Value of Claims
Partnering	0.22	1 $19,760 1 $50,587	$70,347
W/O Partnering	0.24	1 $25,027	$25,027
All Contracts	0.23	3	$95,374

The literature review revealed one significant impact of partnering is the decreased number and value of claims. In the surveyed projects, the partnered projects account for two of the three claims. When the number of claims is normalized against the value of contract awards, partnered projects have a slightly lower rate of claims. Partnering does not guarantee that the contracting parties will not have differences. One of the two claims involved in the partnered projects was submitted eight months prior to scheduled project completion. Often claims are not discussed until the project is near completion and the contracting parties must resolve their outstanding differences in order to determine the final payment. A claim submitted prior to substantial completion may indicate that the contracting parties had been discussing problems as the situation arose and they had attempted to reach an agreement. It does not appear that partnering

has made a significant impact on claims. Table XII explores all current claims in the Seattle District.

Table XII. Current Unresolved Claims As of March 1994.

Year of Claim	Number	Value
Pre 1990	1	$51,638
1990	3	$2,963,175
1991	2	$434,167
1992	6*	$518,638
1993	1	$19,760
1994	2*	$50,587
Total	15	$4,037,965

* Includes a Claim of $0.00 (Responsibility issue)

Information on the actual number of claims for projects administered from 1985 through 1993 was unavailable to the author. The largest number of unresolved claims is from 1992. This is the same year that the district began using partnering. The claims associated with 1992 arise from projects started before partnering was implemented. The number of unresolved claims from 1993 is lower than 1992. This may suggest that a change has occurred with respect to the frequency and willingness of the contracting parties to initiate a claim. A fewer number of unresolved claims in the more recent years is a positive trend. A more thorough

analysis is not possible because of the limited data. It is interesting to note the table excludes the data for one project with 54 outstanding claims over the years from 1992 to 1994 valued at $24.7 million. This project did not use partnering.

Cost Growth

The cost growth of a project can indicate the magnitude of the changes involved in a construction project. A high cost growth could indicate many changes, poor plans and specifications, and poor administration of the contract. A low cost growth could indicate the opposite circumstance. Partnered projects should have a lower cost growth than projects without partnering that have the same changes, plans, specifications, and personnel. Again, the cooperative attitude and open flow of information on partnered projects should contribute to lower cost growth. Table XIII depicts the average cost growth for projects.

Table XIII. Average Cost Growth for Projects.

Type of Project	Average	Median	Minimum	Maximum	N
Partnering	7.8%	7.1%	1.6%	16.1%	9
W/O Partnering	7.8%	6.3%	2.2%	17.5%	17
All Contracts	7.8%	7.1%	1.6%	17.5%	26

The comparison in Table XIII shows that the average cost growth for partnered projects is the same as the projects without partnering. The median average for projects without partnering is lower than partnered projects. This indicates a significant difference between the two types of projects does not exist.

Time Growth

The time growth of a project also can indicate the magnitude of the changes invclved in administering a construction contract. A large time growth could indicate numerous changes that effected the contractor's work schedule and resulted in delays. Low time growth could indicate the contracting parties worked together to identify changes early so the new work could be scheduled so as to not effect the duration of the project. Partnered projects should have a lower time growth for this very reason. The significant impact of the time growth of a project is that increased project durations cost the contracting parties money and decrease their efficiency in administering construction contracts. The time growth should not include delays or time extensions

due to adverse weather. This is an element over which the contracting parties have little control.

Table XIV shows that partnered projects have a substantially lower time growth than projects without partnering. Comparing the average and median time growth in Table XIV with the number of zero time growth projects in Table XV reveals that the projects without partnering had several high time growth projects. Even though only 33% of the partnered projects had zero time growth and the projects without partnering had a low median average, the partnered projects still had a substantially lower average time growth. This indicates partnered projects tend to have consistently lower time growth.

Table XIV. Average Time Growth for Projects.

Type of Project	Average	Median	Minimum	Maximum	N
Partnering	3.6%	0.7%	0%	11.1%	9
W/O Partnering	12.0%	1.4%	0%	67.7%	17
All Contracts	9.1%	1.4%	0%	67.7%	26

Table XV. Percentage of Zero Time Growth Projects.

Type of Projects	Projects with Zero Time Growth	Number of Zero Growth Projects
Partnering	33.3%	3
W/O Partnering	47.1%	8
All Contracts	42.3%	11

Table XVI indicates partnered projects are much more likely to be completed early than are projects without partnering. The only late project in the sample is a project without partnering. The four projects still in progress are all on schedule. Two of the partnered projects will be completed within a month and apparently will not be completed early. Completing a project early usually means an increased profit to the contractor and increased productivity for the government workers. If this trend of partnered projects is maintained, this could be a significant impact of partnering on construction projects.

Table XVI. Early-Late Project Completions.

Type of Project	Number of Complete Projects	% Early (N)	% On Time (N)	% Late (N)
Partnering	6	33.3% (2)	66.7% (4)	0% (0)
W/O Partnering	16	6.3% (1)	87.4% (14)	6.3% (1)
All Contracts	22	13.6% (3)	81.8% (18)	4.6% (1)

Contractor Perceptions

A survey of 59 general contractors with the Seattle District, U.S. Army Corps of Engineers resulted in 34 responses (57%). One respondent only provided comments

and did not complete the survey. The survey responses revealed many contractors have experience with partnering (20 of 34). Table XVII provides a breakdown of contractors with partnering experience and their perception of the potential impact of partnering on a project. A majority of the responding contractors believe partnering has the potential to improve project performance, either greatly or slightly. A greater percentage of contractors with experience in partnering believe partnering has the potential to improve a project. This may indicate that a majority of contractors involved in past partnered projects had favorable results. One contractor with partnering experience felt partnering had a negative impact on the project.

Table XVII. Potential Impact of Partnering on a Project.

Experience w/ Partnering (N)	Greatly Improve Project	Slightly Improve Project	Negative Impact on Project	No Impact on Project
YES (20)	50%	40%	5%	5%
NO (13)	38%	31%	8%	23%
All Contractors	46%	36%	6%	12%

Table XVIII shows the influence on the decision of a contractor to bid a project when the project potentially will employ partnering. For a vast majority of all

contractors (67%), the potential use of partnering has no influence on their bidding decision. For contractors with past partnering experience, partnering does not influence 70% of the contractors, but 15% of the contractors would decrease their bid prices. This may indicate that these contractors had favorable results with past partnered projects and the results made a difference in their profit. Other responses pertained to project administration. These included:

-improves ability to perform on large projects

-reduces the amount of additional work

-changes decision making process

-changes mobilization approach to the project

Table XVIII. Influence of Partnering on Bid Decision.

Experience w/ Partnering (N)	No Influence	Increase Bid	Decrease Bid	*Other Response
YES (20)	70%	5%	15%	10%
NO (13)	62%	15%	8%	15%
All Contractors	67%	9%	12%	12%

* Other Responses included mobilization, decision making, and expected job performance.

Table XIX shows contractor perceptions (all contractors had experience with a partnered project) of the impact of partnering on project administration. Table XIX indicates partnering significantly improved the

working relationship between the contractor and the government agency and partnering had some influence in improving the government agency's internal operations. Partnered projects should tend to have these results since open communication and cooperation is the norm on partnered projects. Most contractors did not feel partnering improved their own internal operations.

Table XIX. Contractor Perceptions of Project Administration (Contractors with Partnering experience).

Area Improved	Yes (N)	No (N)	Undecided (N)
Contractor's Internal Operation	30% (6)	65% (13)	5% (1)
Relationship of Contracting Parties	80% (16)	15% (3)	5% (1)
Agency's Internal Operation	50% (10)	40% (8)	10% (2)

Table XX is based on the perceptions of 20 contractors with past experience on partnered projects. The results demonstrate that the perceptions of contractors tend to follow the results published in current literature. Of particular interest was the perception by only 25% of the respondents that safety was improved by partnering. 10% of the respondents (2 responses) felt that no contribution was afforded by partnering. Contractors do feel that partnering improves

the quality of the end product. This is an area of recent concern in the industry.

The survey of contractors verified several of the positive aspects of partnering on contract administration. From the contractor's point of view, partnering can potentially improve construction projects, partnering does improve the working relationship between the contracting parties, and partnering is reducing claims, improving quality, and improving communications on a project. The survey also indicated that contractors view partnering as improving the internal operations or administration of government agency projects. The survey indicates most contractors are receptive to partnering a construction project but there are still exceptions.

Table XX. Contribution of Partnering to Improving a Project.

Area Improved Due to Partnering	Percent Selected
Reduced RFI Turnaround Time	80%
Reduced Number of Claims	75%
Improved Quality of End Product	55%
Reduced Time to Approve Changes	50%
Reduced Time to Approve Submittals	50%
Reduced Cost Growth	40%
Reduced Number of Changes	30%
Improved Safety	25%
No Contribution to Improving the Project	10%

Statistical Review of Data

The results of the data collected on partnered projects and projects without partnering were statistically compared to determine if any of the results were different. The Student T-test was used to compare the averages, utilizing the standard deviations of the results. The Student T-test is a means test for two independent samples with unknown population standard deviation and samples sizes less than 30 from a population that is normally distributed (Mahoney, 1993). The two sample sizes of collected data were nine (9) for partnered projects and 17 for projects without partnering, both under 30. The CHI-Square (χ^2) test of goodness of fit can be used to determine if the data is actually normally distributed (Mahoney, 1993). In order to test the data for goodness of fit, the null hypothesis assumed that the sample data was normally distributed. An alternate hypothesis was assumed that the sample data was not normally distributed. The sample data was considered normally distributed if the null hypothesis was not rejected. The test was performed for a Type I error with a two tailed critical region with an assumed five percent significance level with v degrees of freedom (v equals the

number of frequencies for the data distribution less two). The data for time to process modification change orders, time to process submittals, cost growth, and time growth are all normally distributed. Table XXI contains the results of the hypothesis tests.

Table XXI. Results of Hypothesis Tests for Normal Distribution.

Data	X^2 calculated	Critical Range of X^2	Degrees of Freedom v	Type of Distribution
Changes	6	2 to 17	8	Normal
Submittal	9	2 to 16	7	Normal
Cost	2	1 to 12	5	Normal
Time	7	1 to 9	3	Normal

A T-test using the Student-t Distribution was conducted to determine if the averages for partnered projects were statistically different from the averages for projects without partnering for the time to process modification change orders, time to process submittals, cost growth, and time growth. A null hypothesis was assumed that the sample averages were equal. An alternate hypothesis assumed that the sample averages were not equal. The averages are considered statistically different if the null hypothesis is rejected. The test was performed for a Type I error with a two tailed critical region with an assumed five percent significance

level with v degrees of freedom (v equals the sample size of partnered projects plus the sample size of projects without partnering less two). The test results are shown in Table XXII. The null hypothesis for each test was not rejected, therefore, the averages are not considered statistically different.

Table XXII. Results of Hypothesis Test for Data Averages.

Data	T calculated	T critical (+/-)	Deg. of Freedom v	Results
Changes Totals	1.67	2.06	24	No Difference
Changes UA	.45	2.11	17	No Difference
Changes CV	1.98	2.07	23	No Difference
Changes C2	.74	2.07	22	No Difference
Changes C7	-.44	2.31	8	No Difference
Submittals	-.02	2.06	24	No Difference
Cost	.51	2.06	24	No Difference
Time	-1.36	2.06	24	No Difference

CHAPTER V: CONCLUSION AND RECOMMENDATION

Conclusion

Partnering as a form of contract administration within the Seattle District, U.S. Army Corps of Engineers is still new. Full application of the partnering principles by the contracting parties do not appear to harm or compromise the performance realized on construction projects. Partnering as a form of contract administration has the potential to improve all aspects of a project.

The results of this study reveal that partnering has had an impact on construction projects. Contractors perceive partnering as a beneficial tool for the administration of contracts. Contractors with previous experience with partnered projects felt that partnering played a role in improving performance on the construction projects. Partnering has improved the use of value engineering change proposals (VECP) within the district.

The other areas of contract administration that this study examined (time to process modification change orders, time to process submittals, cost growth, and time growth) do not reveal a statistically significant difference between the results experienced on partnered

projects and projects without partnering. The number of claims within the district appears to be decreasing but a clear link between this decrease and the use of partnering is conjecture without more substantiating data.

The data collected for this study, except the survey of contractors, is unbiased data. The results of this study demonstrate that the use of partnering does not assure the elimination or resolution of every problem on a construction project. The literature review produced many articles that claimed partnering improved most aspects of a project. This study does not affirm such broad claims, however, the results of this study do support the use of partnering to improve performance on construction projects. The results of partnering depend upon the contracting parties and numerous project specific circumstances since each project truly is unique.

Recommendation

Since this study did not reveal significant differences between the performance criteria measured on partnered projects and projects without partnering, further research using the same methodology may be warranted. As more projects use partnering, a larger

sample could be studied to determine if a difference between the two types of projects exists.

This study dealt with quantified variables that pertain to a construction project and it included the perceptions of contractors about partnering. A study on the total effectiveness of partnering should include an evaluation of the attitudes of all contracting parties, including subcontractors, safety personnel, quality control personnel, design personnel, the user, and the government personnel, and any other personnel involved with administering the contract. The literature review revealed the contracting parties were happier and more satisfied with their jobs on partnered projects.

A broad based study including data from numerous projects would provide significant information on the true influence that partnering has on project performance and on the various contracting parties. This study should include data concerning subcontractor performance. Areas to be studied should include job satisfaction, time to receive payment, processing submittals, and quality of coordination between the general contractor and other subcontractors.

Further study of partnering should continue to focus on objective criteria to evaluate the performances of construction projects. The time to process requests for

information (RFIs) should be examined. The time to process submittals should also determine if a submittal was turned in on time and whether it was returned to the contractor by the required date. The acceptance and rejection rate of the submittals may also be evaluated. Safety on the project could be studied by examining the number of recordable accidents, number of lost workdays, or by the results of on-site safety inspections. The quality of the project could be evaluated by recording the number of warranty calls in the first year of project completion. The number of punchlist items could be studied along with the time to complete these punchlist items.

The U.S. Army Corps of Engineers has fully adopted the use of partnering to administer contracts. It should continue this practice and apply the partnering principles to all aspects of its mission. Trust, commitment, and a shared vision can go a long way to resolving problems between parties that really do have a common goal.

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APPENDIX A: REQUEST FOR INFORMATION TO SEATTLE DISTRICT

7 May 1994

MEMORANDUM FOR SEATTLE DISTRICT, CORPS OF ENGINEERS, CONSTRUCTION DIVISION, ATTN: RICHARD BAKER, SEATTLE, WA 98124

SUBJECT: Request For Assistance

1. I am a graduate student at the University of Washington conducting research on Partnering. The information I am gathering will be used to help fulfill my thesis requirements.

2. I am seeking information related to Corps of Engineer partnered projects. The information I am seeking concerns changes, claims, time growth, and Request for Information (RFI) and submittal turnaround time for each project.

3. Please provide the same information requested above on a similar number of non-partnered projects.

4. I have provided the attached sheets to facilitate gathering and organizing the requested information. You are free to provide the same information in a different format.

5. I appreciate your help. I am available to assist you in collecting this data. Please fell free to call me at (206) 840-6799.

JEFFREY R. ECKSTEIN
CPT, EN
Graduate Student

INFORMATION SHEET

PROJECT ID: _____

AVG. TURNAROUND TIME FOR RFI (Requests for Information)____
_____ Days NUMBER OF RFI_____

AVG. TURNAROUND TIME FOR SUBMITTALS (From date submitted to approval date) _____ NUMBER OF SUBMITTALS _____
__

OUTSTANDING CLAIMS (as of completion of punchlist work)
NUMBER OF CLAIMS _____ AMOUNT OF CLAIMS $_____

TIME GROWTH OF PROJECT
ORIGINAL DURATION _____Days
ACTUAL DURATION _____Days
ADDITIONAL TIME GRANTED TO CONTRACTOR _____Days

CHANGES/MODIFICATIONS (all or a sampling)

CHANGE VALUE	DATE OF REQUEST FOR PROPOSAL	DATE OF CONTRACT OFFICER APPROVAL	$

APPENDIX B: SURVEY OF CONTRACTORS

1. I am Jeff Eckstein, a graduate student at the University of Washington, and I am conducting research on Partnering. The information I am gathering will be used to help fulfill my thesis requirement.

2. I am seeking information concerning your opinion/experience about Partnering on public works projects. I have enclosed a return envelop for your use. Your speedy reply is appreciated.

Please provide any comments about this survey on the back.

A. What do you believe is the potential impact of Partnering on a job?

__greatly improve __slightly improve
__negatively impact __no impact

B. Does the potential use of Partnering influence your decision to bid a job?

__YES __NO

If Yes, How?

__increase bid price __decrease bid price __not bid job

__other (Please list)_____

C. Have you entered into a Partnering relationship with a government agency?

__YES __NO

If Yes, Who? __Corps of Engineers __US Navy
__WSDOT __other

If No, you are finished. You may add comments on the back.

D. Have you had a previous non-partnering job with a government agency?

__YES __NO

If Yes, Who? __Corps of Engineers __US Navy
__WSDOT __other

E. Did Partnering improve your internal company operations?

__YES __NO

F. Did Partnering improve your working relationship with the government agency? __YES __NO

G. Do you think Partnering improved the internal operations of the government agency? __YES __NO

H. Did Partnering contribute to improving any of the following aspects of the job? (Check all that apply)

__Safety
__Reducing cost growth
__Reducing RFI turnaround time
__Reducing the number of changes
__Reducing the time to approve a change
__Reducing the time to approve submittals
__quality of end product
__Reducing claims at project completion

APPENDIX C: DATA FOR PARTNERED PROJECTS

Project: AA Claims: None VECP: None

Original Cost: $3,069,525 Final Cost: $3,558,115

Cost Growth: 15.17%

Original Duration: 365 days Actual Duration: 377 days

Time Extension Granted: 12 days Weather Delays: 0 days

Time Growth: 3.29% Project Completion: On Time

Changes: Type	Number	Time
UA	7	65 days
CV	12	80 days
C2	9	47 days
C7	0	days
Other	2	166 days
Total	30	72 days

Average Turnaround for Submittals: 143 10.168 days

Project: BB Claims: 1 $50,587 VECP: 1 $12,073

Original Cost: $13,997,240 Final Cost: $14,879,908

Cost Growth: 6.31%

Original Duration: 720 days Actual Duration: 728 days

Time Extension Granted: 8 days Weather Delays: 3 days

Time Growth: 0.69% Project Completion: OCT 94

Changes: Type	Number	Time
UA	0	days
CV	7	69 days
C2	32	76 days
C7	0	days
Other	2	59 days
Total	41	74 days

Average Turnaround for Submittals: 175 8.086 days

Project: CC Claims: None VECP: None

Original Cost: $7,040,000 Final Cost: $7,152,303

Cost Growth: 1.60%

Original Duration: 420 days Actual Duration: 420 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: OCT 94

Changes: Type	Number	Time
UA	0	days
CV	3	121 days
C2	7	103 days
C7	0	days
Other	0	days
Total	10	108 days

Average Turnaround for Submittals: 222 10.324 days

Project: DD Claims: 1 $19,760 VECP: 1 $27,270

Original Cost: $16,216,450 Final Cost: $17,372,713

Cost Growth: 7.13%

Original Duration: 540 days Actual Duration: 652 days

Time Extension Granted: 112 days Weather Delays: 52 days

Time Growth: 11.11% Project Completion: EARLY

Changes: Type	Number	Time
UA	12	52 days
CV	15	72 days
C2	26	46 days
C7	2	84 days
Other	8	11 days
Total	65	50 days

Average Turnaround for Submittals: 499 8.00 days

Project: EE Claims: None VECP: None

Original Cost: $5,217,000 Final Cost: $6,055,600

Cost Growth: 16.07%

Original Duration: 465 days Actual Duration: 549 days

Time Extension Granted: 84 days Weather Delays: 34 days

Time Growth: 10.75% Project Completion: EARLY

Changes: Type	Number	Time
UA	13	80 days
CV	14	39 days
C2	15	23 days
C7	7	26 days
Other	5	35 days
Total	54	42 days

Average Turnaround for Submittals: 230 8.40 days

Project: FF Claims: None VECP: None

Original Cost: $4,100,000 Final Cost: $4,184,800

Cost Growth: 2.07%

Original Duration: 450 days Actual Duration: 476 days

Time Extension Granted: 26 days Weather Delays: 25 days

Time Growth: 0.22% Project Completion: On Time

Changes: Type	Number	Time
UA	4	12 days
CV	1	18 days
C2	1	108 days
C7	2	62 days
Other	2	37 days
Total	10	37 days

Average Turnaround for Submittals: 277 5.50 days

Project: GG Claims: None VECP: 2 $23,142

Original Cost: $1,377,000 Final Cost: $1,474,231

Cost Growth: 7.06%

Original Duration: 365 days Actual Duration: 365 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: On Time

Changes: Type	Number	Time
UA	0	days
CV	5	81 days
C2	1	54 days
C7	0	days
Other	7	90 days
Total	13	84 days

Average Turnaround for Submittals: 51 14.30 days

Project: HH Claims: None VECP: None

Original Cost: $7,148,992 Final Cost: $7,480,710

Cost Growth: 4.64%

Original Duration: 470 days Actual Duration: 498 days

Time Extension Granted: 28 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: On Time

Changes: Type	Number	Time
UA	12	189 days
CV	6	96 days
C2	0	days
C7	0	days
Other	2	6 days
Total	20	142 days

Average Turnaround for Submittals: 115 10.165 days

Project: II Claims: None VECP: 4 $210,185

Original Cost: $33,500,000 Final Cost: $36,809,513

Cost Growth: 9.88%

Original Duration: 1250 days Actual Duration: 1250 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: SEP 95

Changes: Type	Number	Time
UA	0	days
CV	26	61 days
C2	6	69 days
C7	1	10 days
Other	3	34 days
Total	36	59 days

Average Turnaround for Submittals: 383 12.60 days

APPENDIX D: DATA FOR PROJECTS WITHOUT PARTNERING

Project: A Claims: 1 $25,027 VECP: None

Original Cost: $6,498,000 Final Cost: $7,292,066

Cost Growth: 12.22%

Original Duration: 450 days Actual Duration: 509 days

Time Extension Granted: 59 days Weather Delays: 0 days

Time Growth: 13.11% Project Completion: On Time

Changes: Type	Number	Time
UA	6	111 days
CV	14	66 days
C2	15	87 days
C7	0	days
Other	0	days
Total	35	83 days

Average Turnaround for Submittals: 135 13.336 days

Project: B Claims: None VECP: None

Original Cost: $1,961,232 Final Cost: $2,137,996

Cost Growth: 7.91%

Original Duration: 360 days Actual Duration: 384 days

Time Extension Granted: 24 days Weather Delays: 24 days

Time Growth: 0.00% Project Completion: EARLY

Changes: Type	Number	Time
UA	4	72 days
CV	5	48 days
C2	1	91 days
C7	1	79 days
Other	2	11 days
Total	13	55 days

Average Turnaround for Submittals: 147 5.905 days

Project: C Claims: None VECP: None

Original Cost: $3,016,000 Final Cost: $3,290,554

Cost Growth: 9.10%

Original Duration: 577 days Actual Duration: 577 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: On Time

Changes: Type	Number	Time
UA	1	133 days
CV	8	52 days
C2	12	78 days
C7	0	days
Other	2	33 days
Total	23	67 days

Average Turnaround for Submittals: 131 9.206 days

Project: D Claims: None VECP: None

Original Cost: $577,617 Final Cost: $642,563

Cost Growth: 15.23%

Original Duration: 270 days Actual Duration: 330 days

Time Extension Granted: 60 days Weather Delays: 0 days

Time Growth: 22.22% Project Completion: On Time

Changes: Type	Number	Time
UA	1	85 days
CV	1	42 days
C2	3	45 days
C7	0	days
Other	1	8 days
Total	6	45 days

Average Turnaround for Submittals: 13 12.385 days

Project: E Claims: None VECP: None

Original Cost: $326,230 Final Cost: $266,750

Cost Growth: 12.42%

Original Duration: 270 days Actual Duration: 300 days

Time Extension Granted: 30 days Weather Delays: 0 days

Time Growth: 11.11% Project Completion: On Time

Changes: Type	Number	Time
UA	1	81 days
CV	1	64 days
C2	1	73 days
C7	0	days
Other	0	days
Total	3	73 days

Average Turnaround for Submittals: 14 5.929 days

Project: F Claims: None VECP: None

Original Cost: $1,222,829 Final Cost: $1,249,060

Cost Growth: 2.15%

Original Duration: 180 days Actual Duration: 300 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 66.67% Project Completion: LATE

Changes: Type	Number	Time
UA	0	days
CV	2	73 days
C2	2	43 days
C7	0	days
Other	0	days
Total	4	58 days

Average Turnaround for Submittals: 68 6.279 days

Project: G Claims: None VECP: None

Original Cost: $742,500 Final Cost: $872,101

Cost Growth: 17.45%

Original Duration: 280 days Actual Duration: 353 days

Time Extension Granted: 73 days Weather Delays: 0 days

Time Growth: 26.07% Project Completion: On Time

Changes: Type	Number	Time
UA	2	9 days
CV	9	35 days
C2	3	26 days
C7	0	days
Other	0	days
Total	14	29 days

Average Turnaround for Submittals: 84 8.607 days

Project: H Claims: None VECP: None

Original Cost: $1,468,232 Final Cost: $1,560,464

Cost Growth: 6.28%

Original Duration: 365 days Actual Duration: 365 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: OCT 94

Changes: Type	Number	Time
UA	1	50 days
CV	3	58 days
C2	5	59 days
C7	1	63 days
Other	1	18 days
Total	11	55 days

Average Turnaround for Submittals: 64 12.047 days

Project: I Claims: None VECP: None

Original Cost: $2,118,993 Final Cost: $2,252,470

Cost Growth: 6.30%

Original Duration: 221 days Actual Duration: 221 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: On Time

Changes: Type	Number	Time
UA	1	55 days
CV	2	46 days
C2	1	37 days
C7	0	days
Other	1	62 days
Total	5	49 days

Average Turnaround for Submittals: 69 9.87 days

Project: J Claims: None VECP: None

Original Cost: $1,583,000 Final Cost: $1,760,132

Cost Growth: 11.19%

Original Duration: 365 days Actual Duration: 370 days

Time Extension Granted: 5 days Weather Delays: 0 days

Time Growth: 1.37% Project Completion: On Time

Changes: Type	Number	Time
UA	2	100 days
CV	12	80 days
C2	9	61 days
C7	0	days
Other	1	180 days
Total	24	79 days

Average Turnaround for Submittals: 86 13.384 days

Project: K Claims: None VECP: None

Original Cost: $4,936,047 Final Cost: $5,195,079

Cost Growth: 5.25%

Original Duration: 315 days Actual Duration: 350 days

Time Extension Granted: 35 days Weather Delays: 0 days

Time Growth: 11.11% Project Completion: On Time

Changes: Type	Number	Time
UA	7	57 days
CV	8	36 days
C2	20	64 days
C7	0	days
Other	0	days
Total	35	56 days

Average Turnaround for Submittals: 87 12.034 days

Project: L Claims: None VECP: None

Original Cost: $529,369 Final Cost: $572,690

Cost Growth: 8.18%

Original Duration: 270 days Actual Duration: 270 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: On Time

Changes: Type	Number	Time
UA	0	days
CV	0	days
C2	1	58 days
C7	0	days
Other	0	days
Total	1	58 days

Average Turnaround for Submittals: 25 7.48 days

Project: M Claims: None VECP: None

Original Cost: $1,468,000 Final Cost: $1,539,000

Cost Growth: 4.84%

Original Duration: 300 days Actual Duration: 300 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: On Time

Changes: Type	Number	Time
UA	2	19 days
CV	2	34 days
C2	3	32 days
C7	1	13 days
Other	0	days
Total	8	27 days

Average Turnaround for Submittals: 45 5.356 days

Project: N Claims: None VECP: None

Original Cost: $1,411,669 Final Cost: $1,466,255

Cost Growth: 3.87%

Original Duration: 310 days Actual Duration: 310 days

Time Extension Granted: 0 days Weather Delays: 0 days

Time Growth: 0.00% Project Completion: On Time

Changes: Type	Number	Time
UA	4	67 days
CV	4	44 days
C2	12	73 days
C7	1	58 days
Other	0	days
Total	21	66 days

Average Turnaround for Submittals: 100 6.87 days

Project: O Claims: None VECP: None

Original Cost: $1,499,000 Final Cost: $1,545,692

Cost Growth: 3.11%

Original Duration: 215 days Actual Duration: 287 days

Time Extension Granted: 72 days Weather Delays: 0 days

Time Growth: 33.49% Project Completion: On Time

Changes: Type	Number	Time
UA	1	92 days
CV	1	86 days
C2	2	90 days
C7	0	days
Other	0	days
Total		90 days

Average Turnaround for Submittals: 128 11.984 days

Project: P Claims: None VECP: None

Original Cost: $1,521,000 Final Cost: $1,568,047

Cost Growth: 3.09%

Original Duration: 360 days Actual Duration: 385 days

Time Extension Granted: 25 days Weather Delays: 25 days

Time Growth: 0.00% Project Completion: On Time

Changes: Type	Number	Time
UA	0	days
CV	1	41 days
C2	8	52 days
C7	6	59 days
Other	2	46 days
Total	17	53 days

Average Turnaround for Submittals: 116 7.50 days

Project: Q Claims: None VECP: None

Original Cost: $8,153,687 Final Cost: $8,497,483

Cost Growth: 4.22%

Original Duration: 420 days Actual Duration: 504 days

Time Extension Granted: 84 days Weather Delays: 10 days

Time Growth: 17.62% Project Completion: On Time

Changes: Type	Number	Time
UA	2	37 days
CV	14	27 days
C2	50	43 days
C7	1	47 days
Other	3	8 days
Total	70	38 days

Average Turnaround for Submittals: 215 8.60 days

APPENDIX E: PERCEPTIONS OF PARTNERING FROM CONTRACTORS

The following are comments by contractors who felt the potential impact of partnering a project was no impact or a negative impact.

1. "Time is money in the private sector. Partnering is a waste of time for anyone who has something to do unlike government employees."

2. "Partnering is another cruel joke on the taxpayers. Government employees rarely have any real interest in actually providing a finished product for their customer. Rather, government construction contracts are successfully completed <u>despite</u> government employee participation & certainly not because of their efforts."

3. "We have always partnered w/ or w/o government agencies, public entities, private owners. It is not a buzz word to us. It has and remains standard practice."

4. "Although the 'Partnering ' clause was included in a number of contracts awarded us, the government did <u>not</u> seem to desire entering into a partnering relationship."

The following are comments by contractors who felt the potential impact of partnering a project was to slightly improve or to greatly improve.

1. "Partnering is a miss nomer (sic). This still leaves a dividing line between the owner-architect and contractor- not a true Partnership!"

2. "The problem w/partnering is that you, the contractor, assume all the risk by being the low bidder on a gov't job. After you are the low bidder the gov't wants to be your partner to reduce cost, changes, and reduce problems, that usually arise due to insufficient info in plans & spec."

3. "No one tells you ahead of time if the job will be partnered on a public bid job."

4. "If the parties are genuine in their efforts, the job will go well."